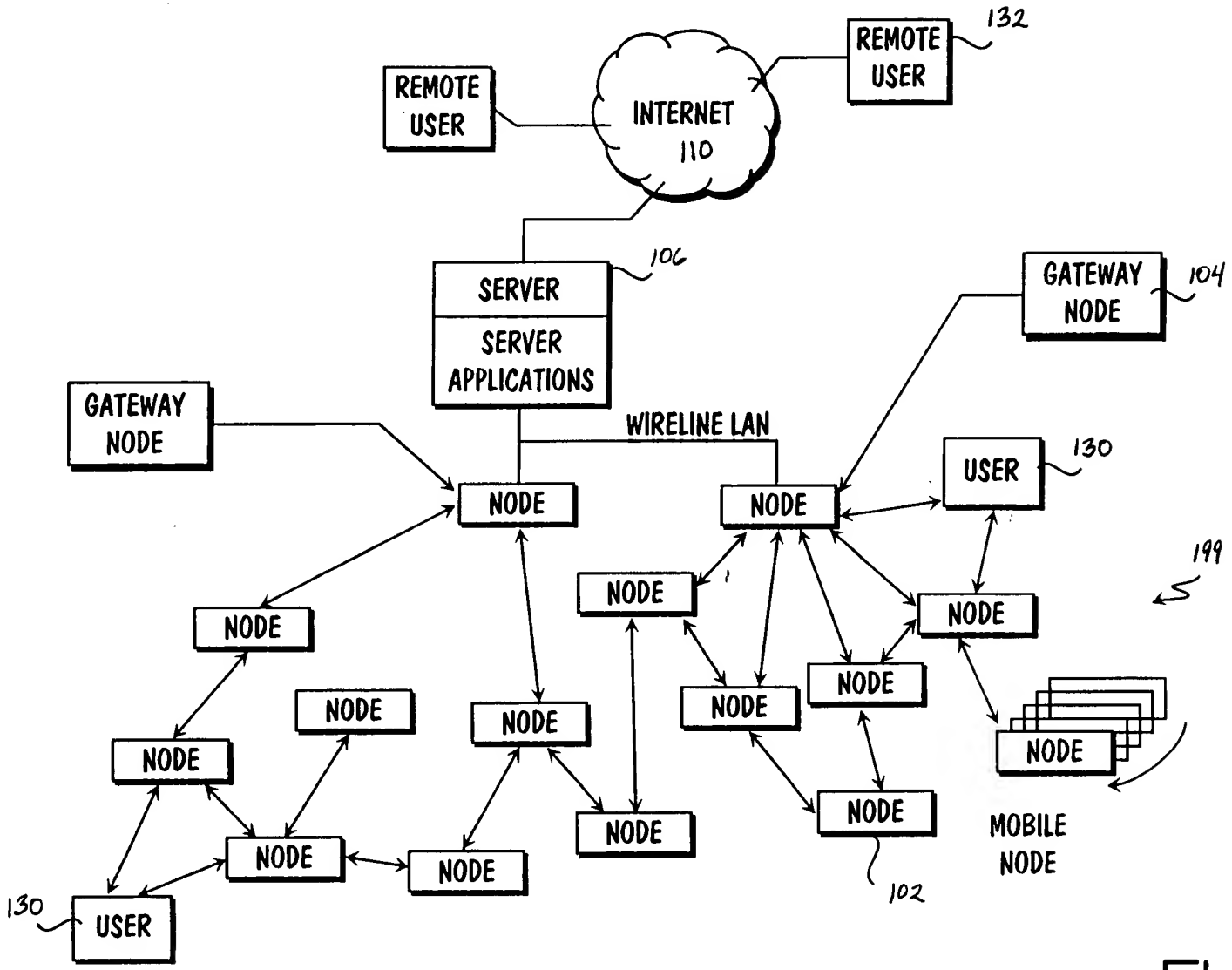

REMOTE USER
INTERNET 110
REMOTE USER
132
SERVER
SERVER APPLICATIONS
106
GATEWAY NODE
104
GATEWAY NODE
WIRELINE LAN
USER
130
NODE
NODE
NODE
NODE
NODE
NODE
NODE
NODE
NODE
NODE
NODE
NODE
NODE
NODE
NODE
199
MOBILE NODE
102
130
USER

FIG. 1

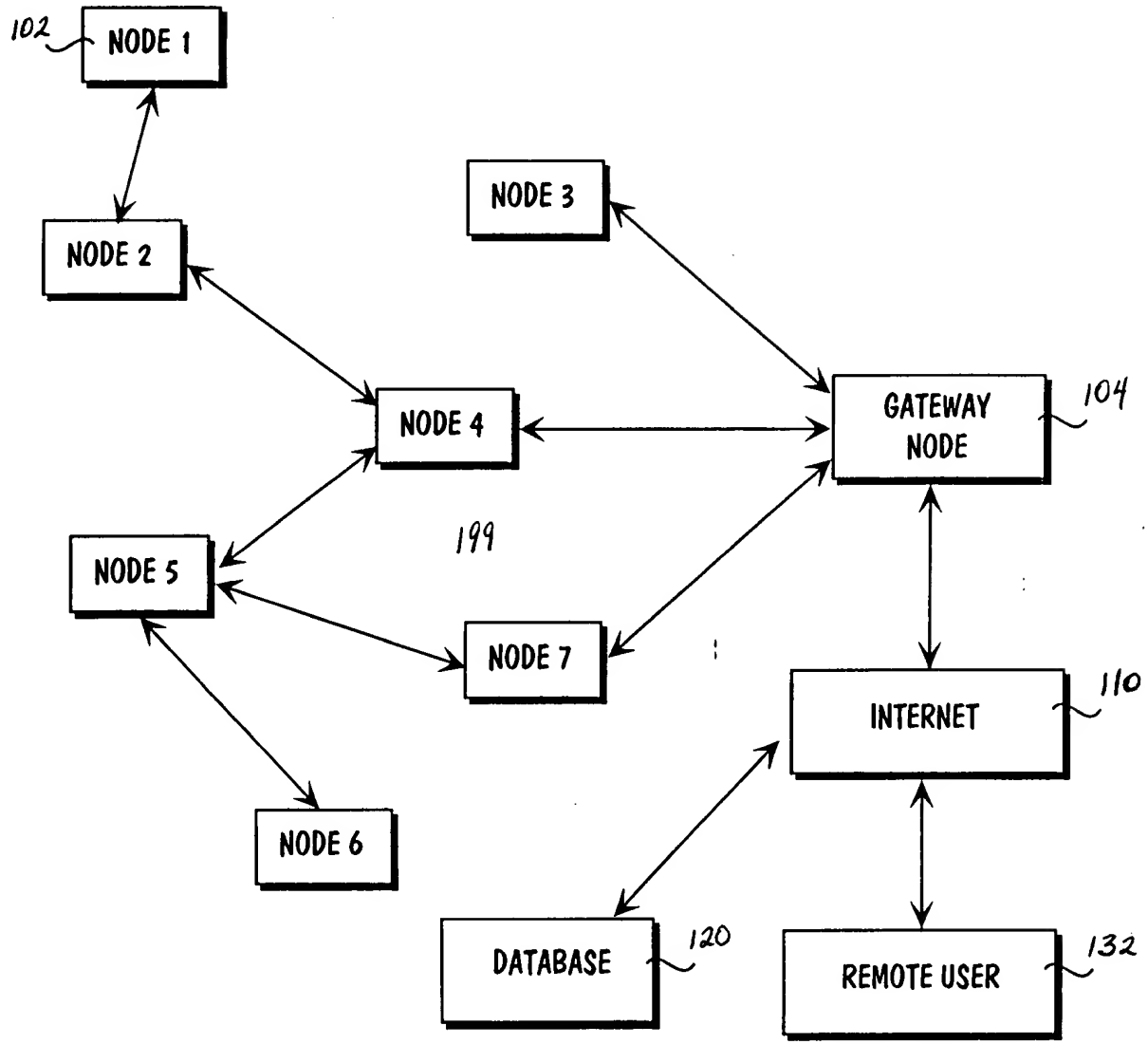

102
NODE 1
NODE 2
NODE 3
NODE 4
GATEWAY NODE
104
199
NODE 5
NODE 7
INTERNET
110
NODE 6
DATABASE
120
REMOTE USER
132

FIG. 2

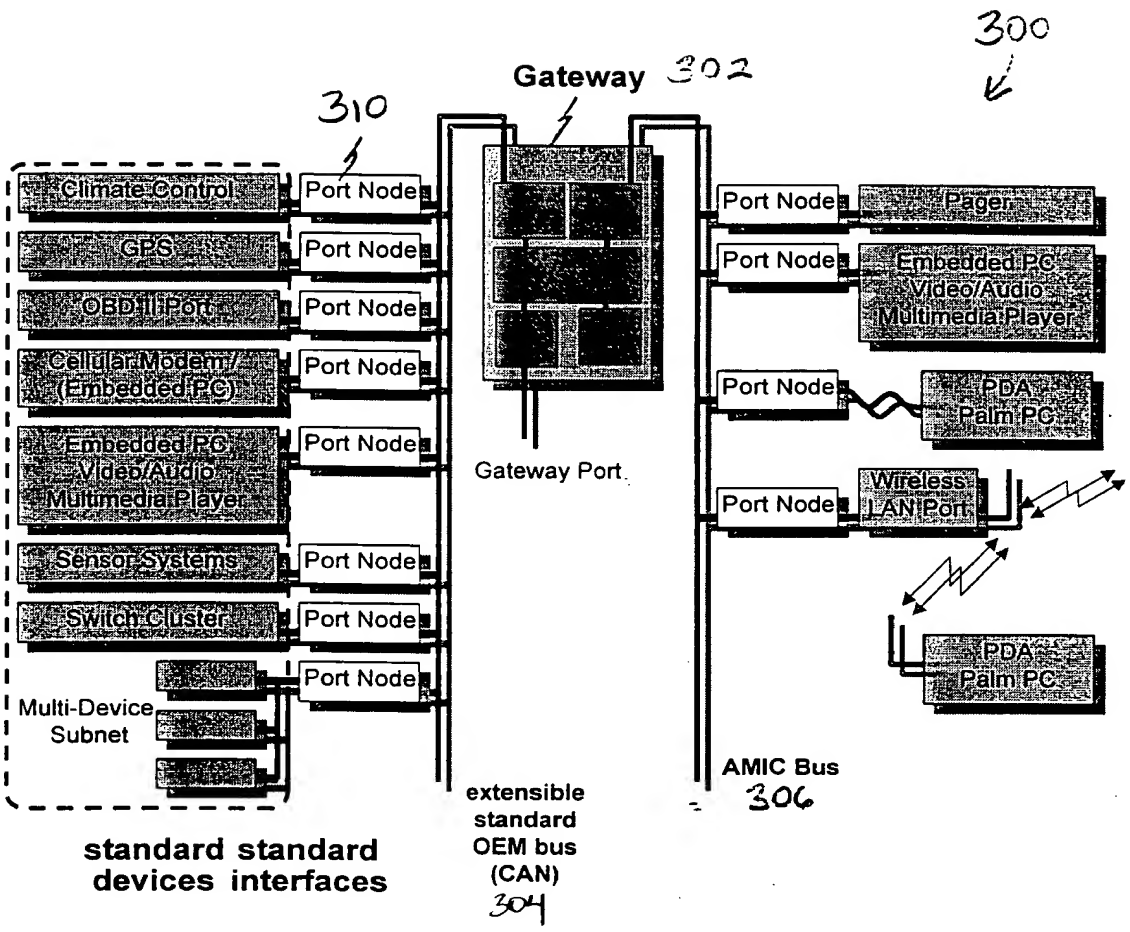


FIGURE 3

09808508-1000400

0960808-040470

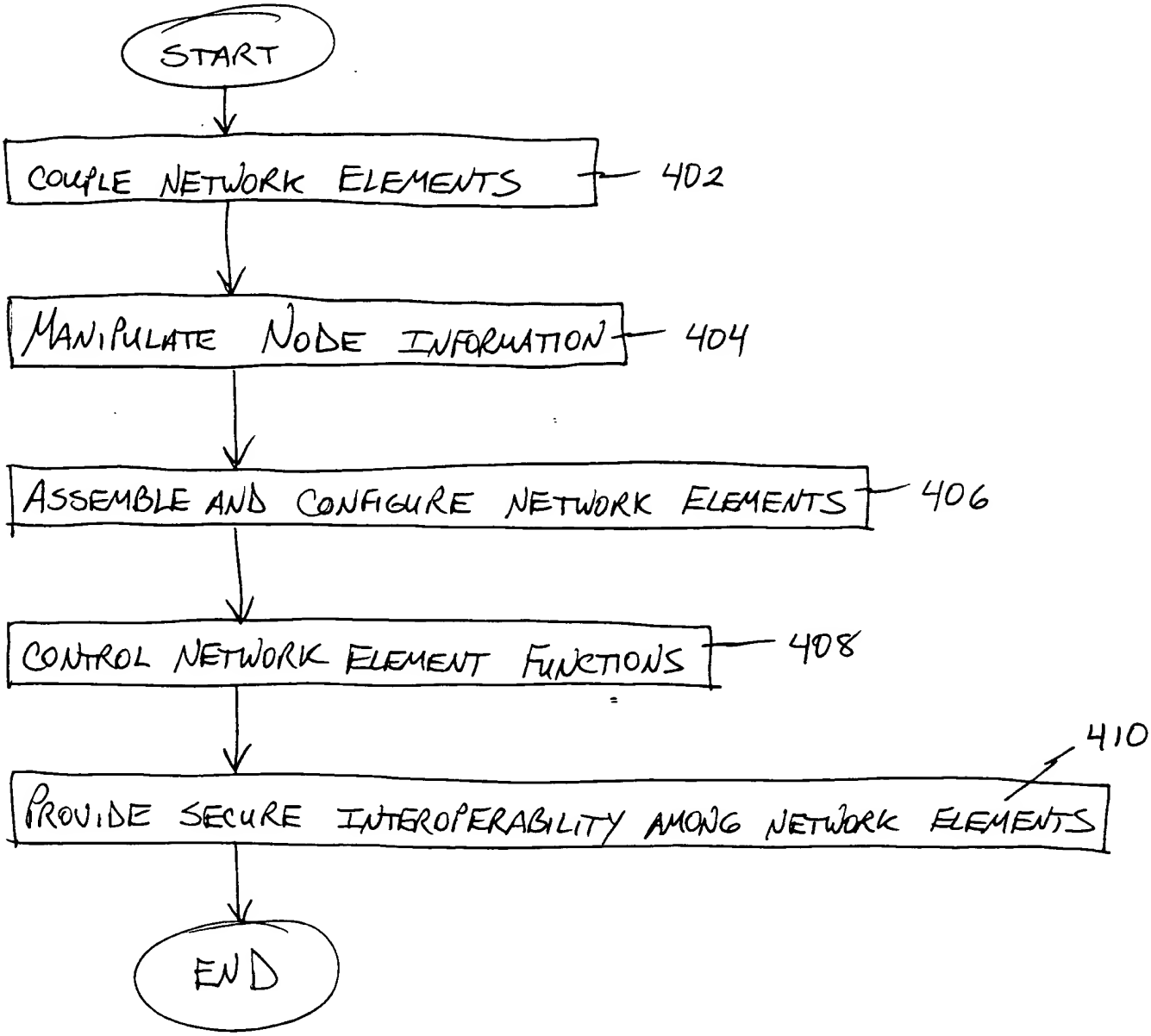
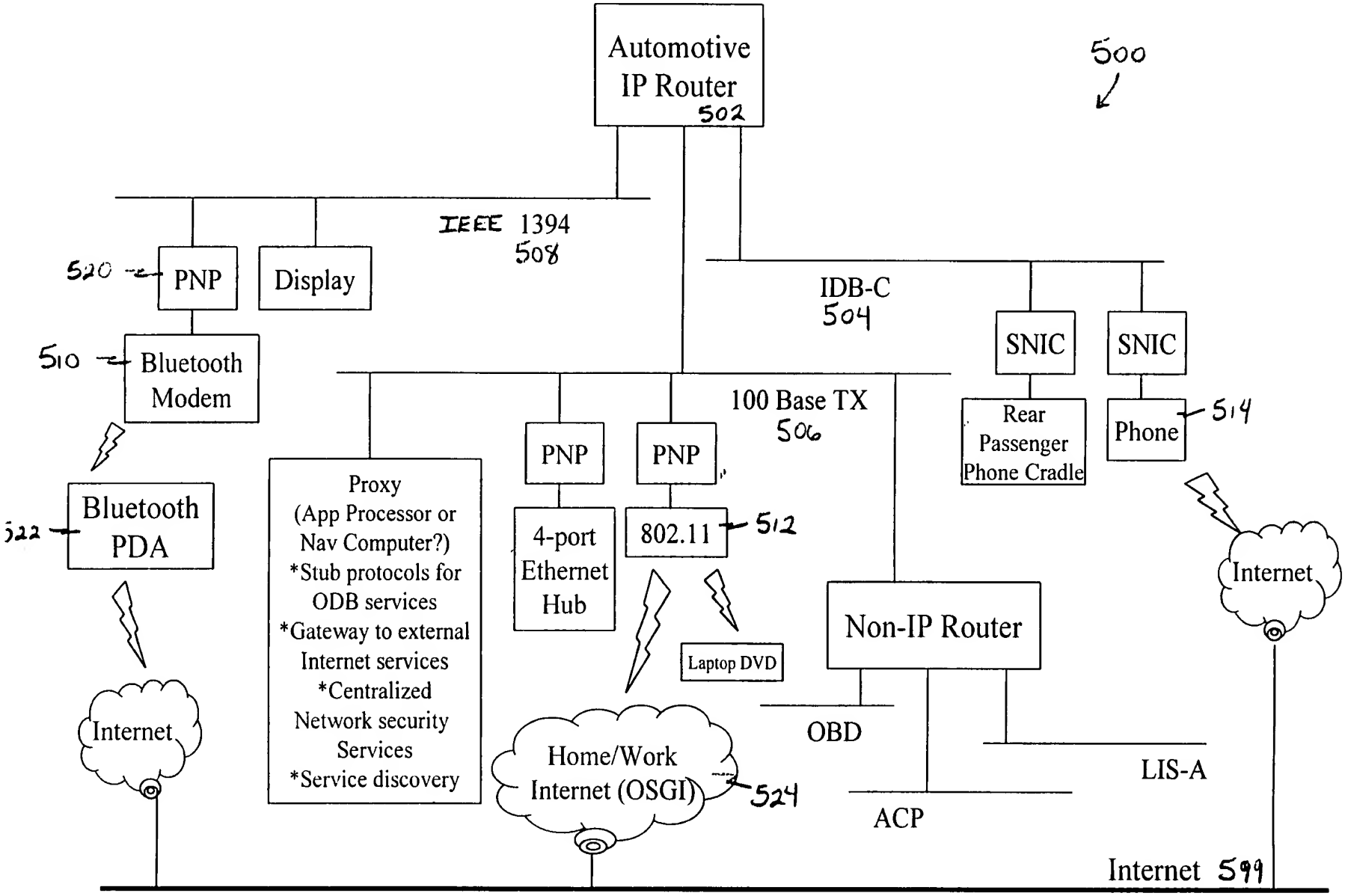


FIGURE 4

Figure 5


Automotive IP Router
502
500
IEEE 1394
508
520
PNP
Display
IDB-C
504
SNIC
SNIC
510
Bluetooth Modem
100 Base TX
506
Rear Passenger Phone Cradle
Phone
514
PNP
PNP
Proxy
(App Processor or Nav Computer?)
*Stub protocols for ODB services
*Gateway to external Internet services
*Centralized Network security Services
*Service discovery
Bluetooth PDA
522
4-port Ethernet Hub
802.11
512
Internet
Non-IP Router
Laptop DVD
Internet
OBD
LIS-A
Home/Work Internet (OSGI)
524
ACP
Internet
599

00h00T"8090896O

Figure 6

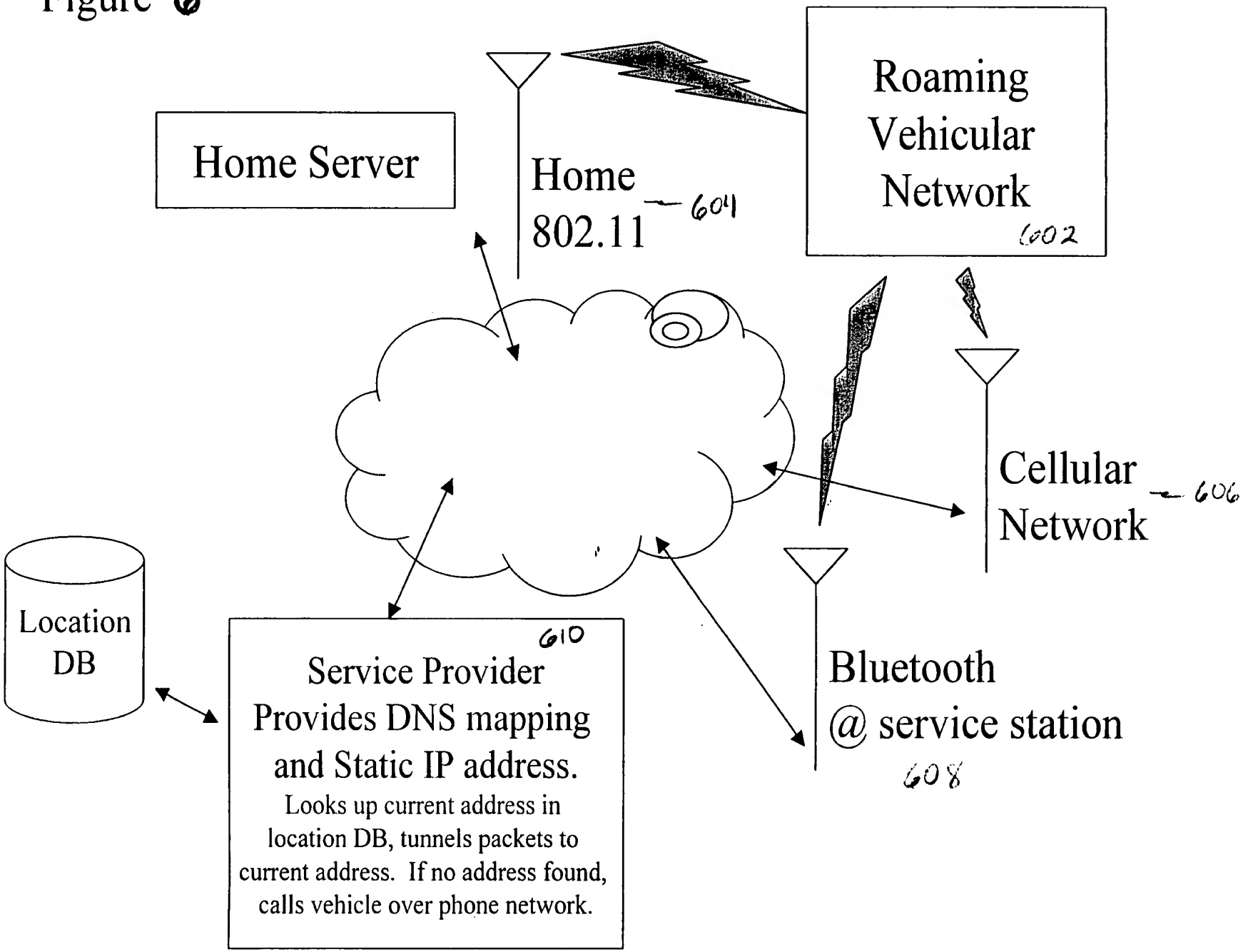


Figure 7

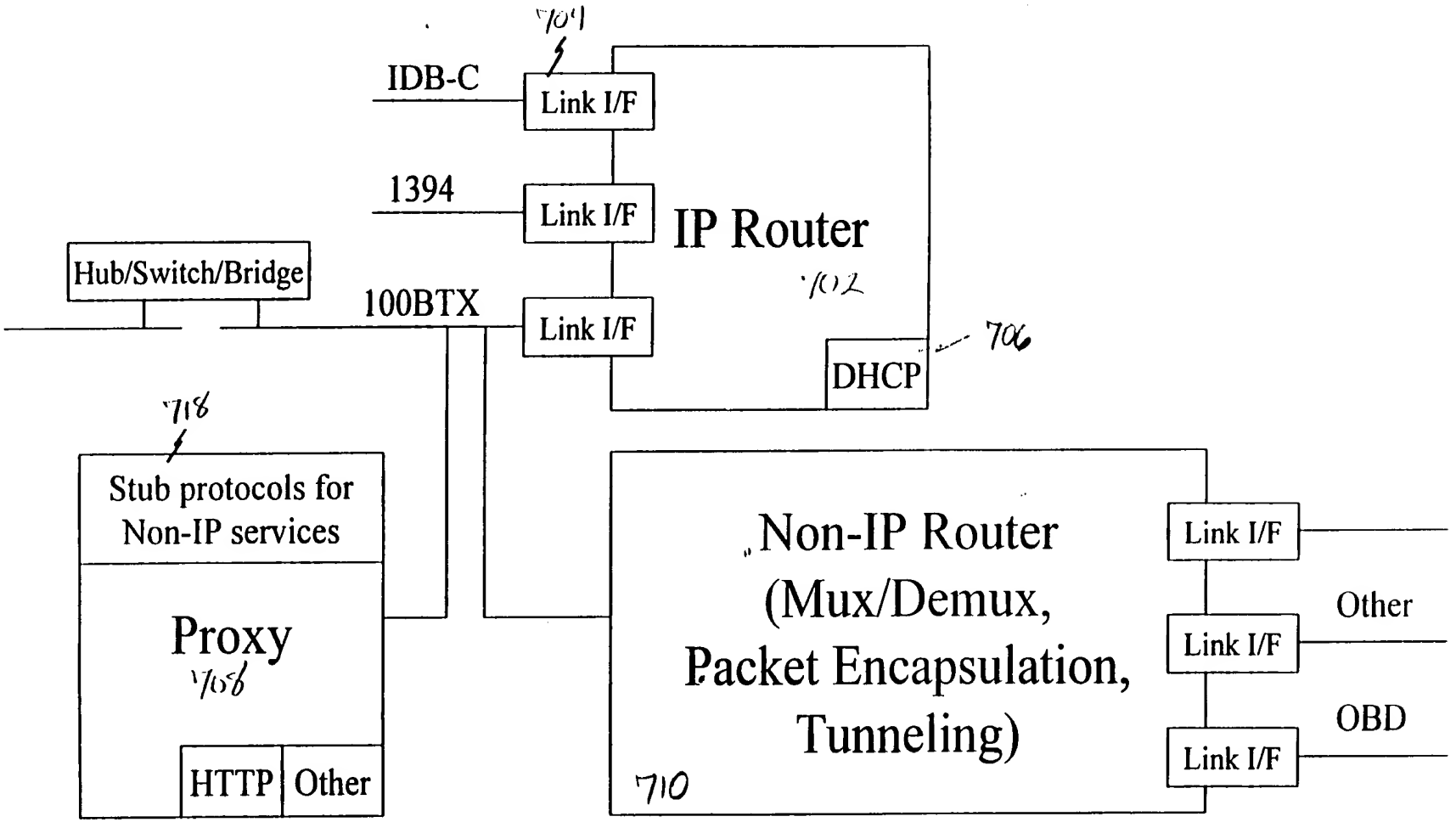
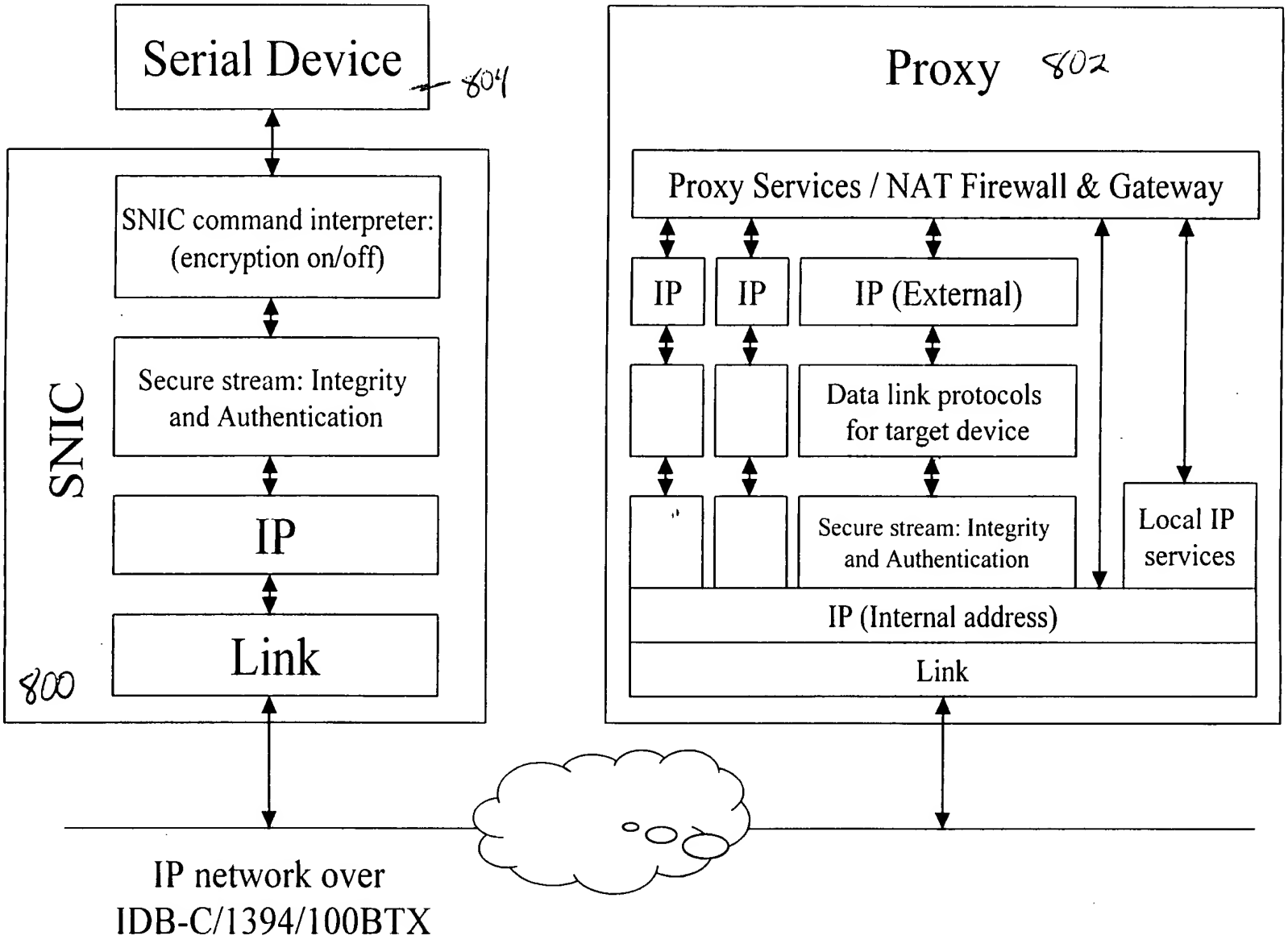
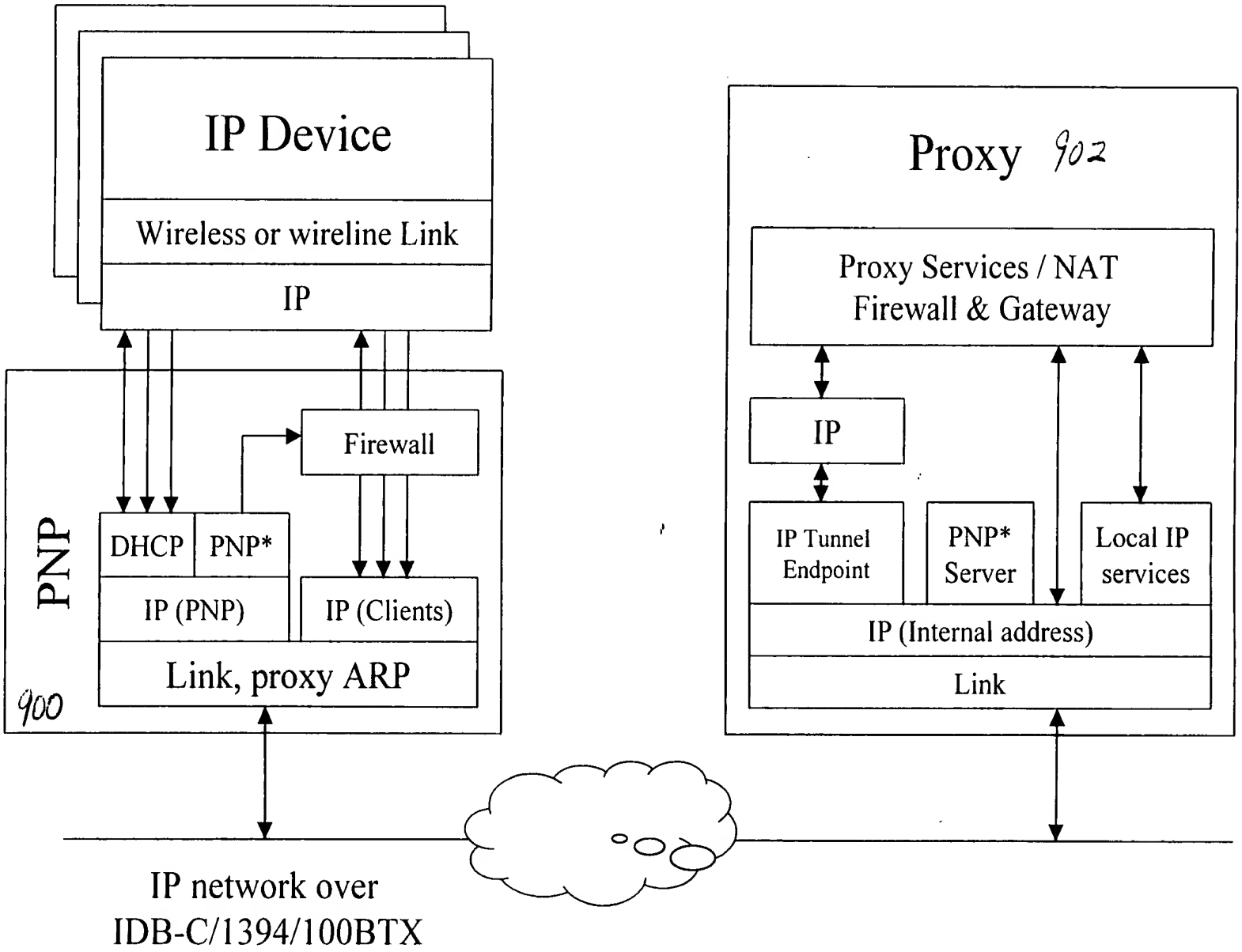

701
IDB-C
Link I/F
1394
Link I/F
IP Router
702
Hub/Switch/Bridge
100BTX
Link I/F
706
DHCP
718
Stub protocols for
Non-IP services
Proxy
708
HTTP
Other
Non-IP Router
(Mux/Demux,
Packet Encapsulation,
Tunneling)
710
Link I/F
Other
Link I/F
OBD
Link I/F

Figure 8


Serial Device
804
SNIC
SNIC command interpreter: (encryption on/off)
Secure stream: Integrity and Authentication
IP
Link
800
Proxy
802
Proxy Services / NAT Firewall & Gateway
IP
IP
IP (External)
Data link protocols for target device
Secure stream: Integrity and Authentication
Local IP services
IP (Internal address)
Link
IP network over
IDB-C/1394/100BTX

DOCKET 80908960

Figure 9



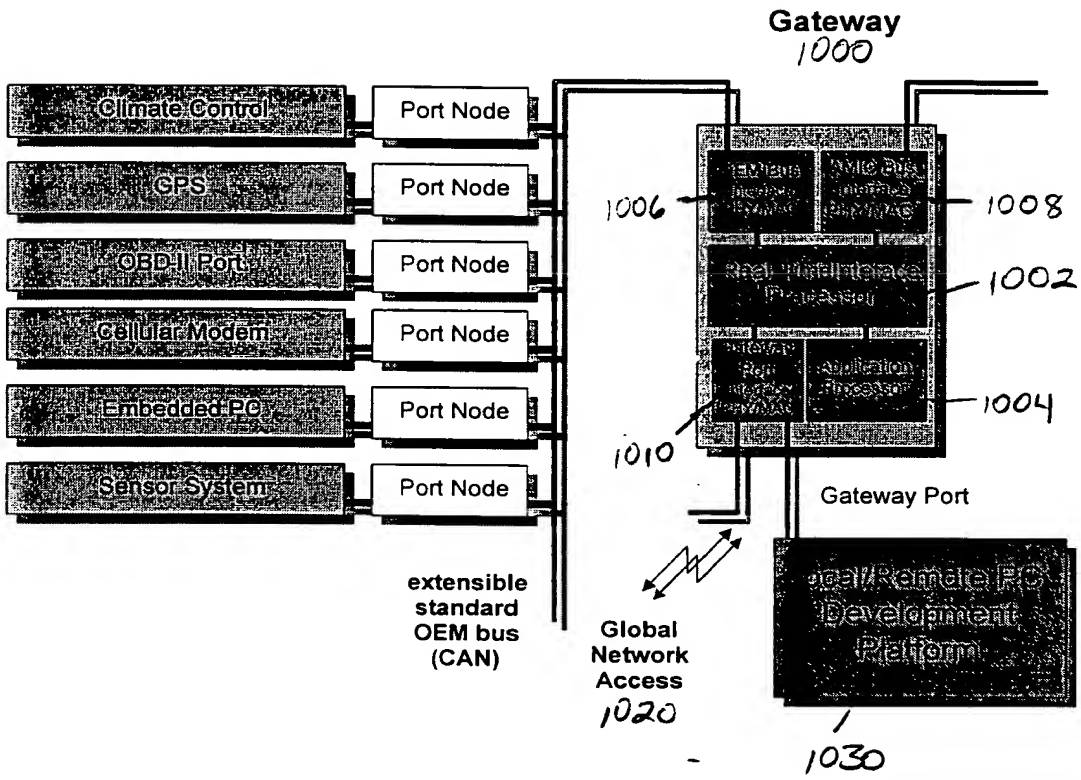


FIGURE 10

09360904-070404

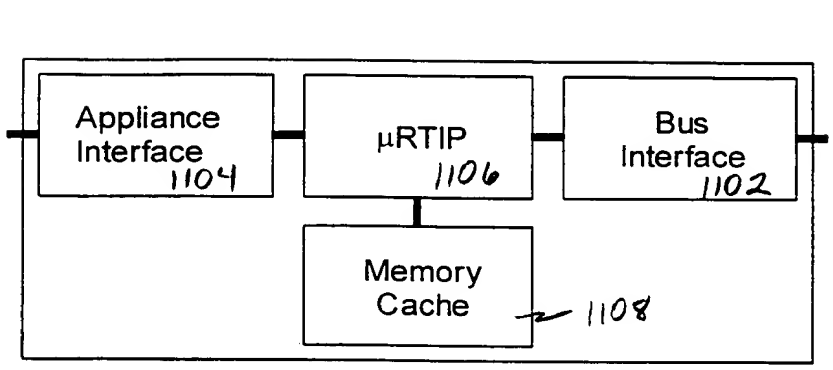


FIGURE 11

0606608-100400

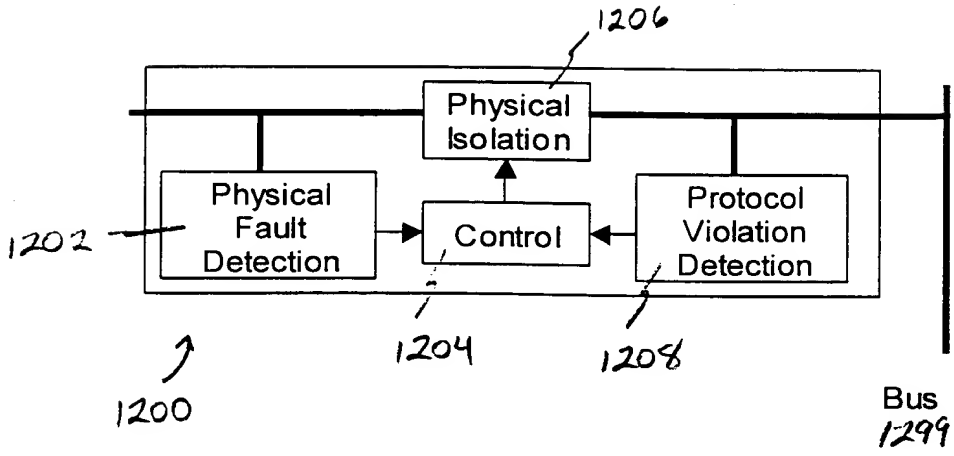


FIGURE 12

0606608.100400

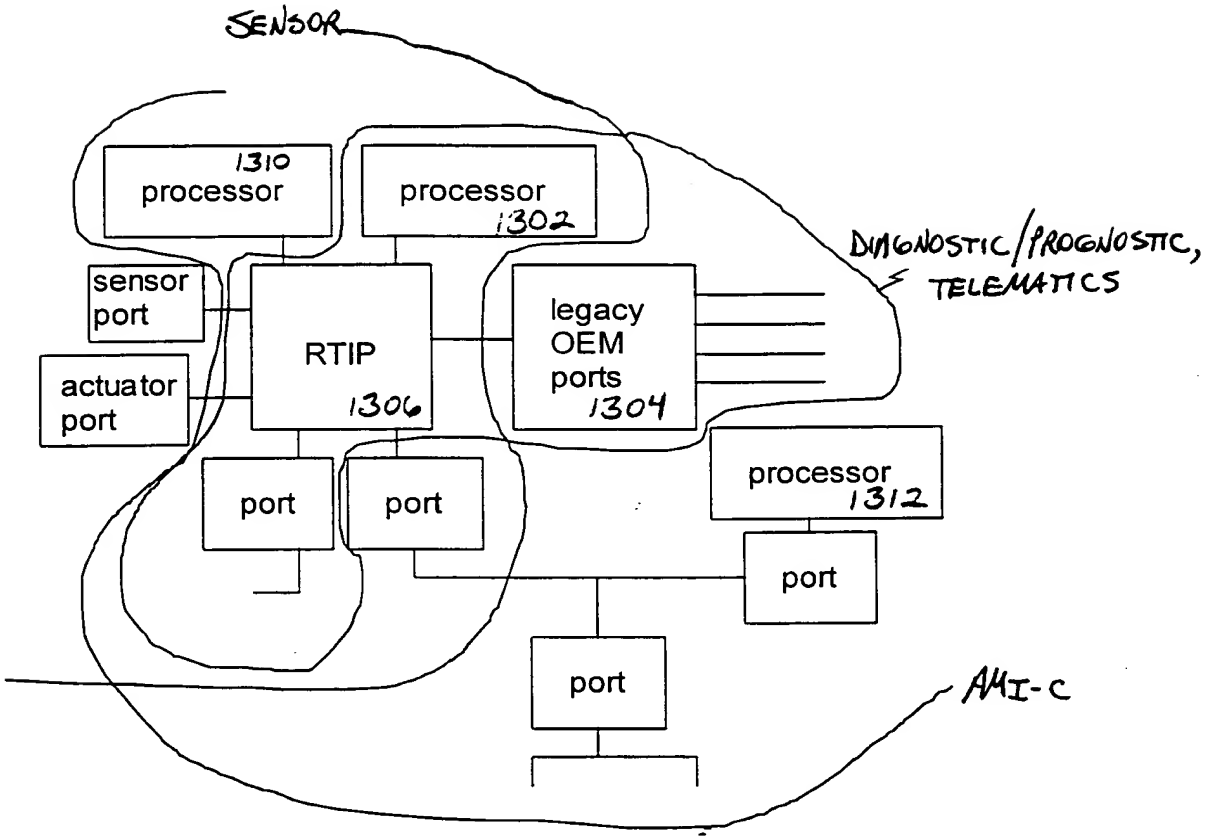

SENSOR
1310
processor
processor
1302
DIAGNOSTIC/PROGNOSTIC,
TELEMATICS
sensor
port
RTIP
1306
legacy
OEM
ports
1304
actuator
port
port
port
processor
1312
port
port
AMI-C

FIGURE 13

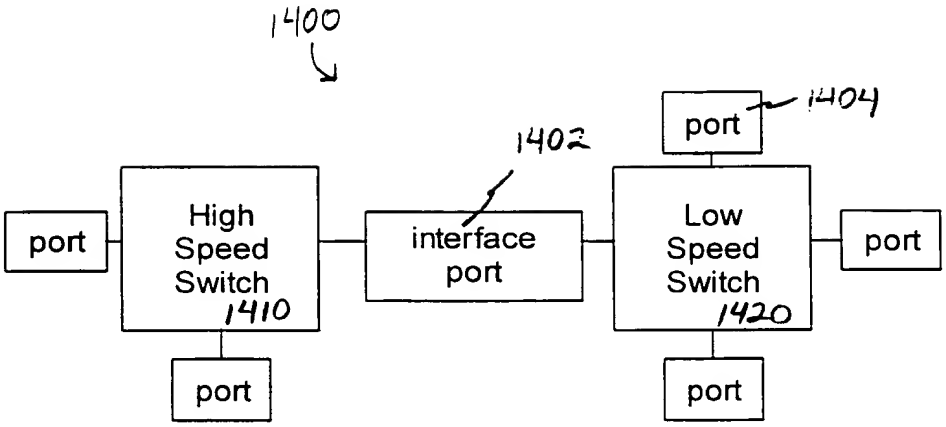


FIGURE 14

0040074 - 6090960

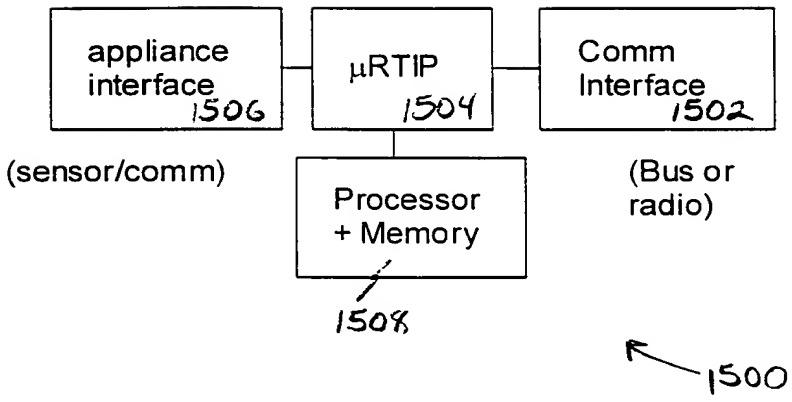

appliance interface
1506
μRTIP
1504
Comm Interface
1502
(sensor/comm)
Processor + Memory
1508
(Bus or radio)
1500

FIGURE 15

1600

Services 1602	Application Support	Database Services	Routing	Security	Network Management	Deployment
Host 1604	Gateway	Gateway	Gateway	Gateway and IPC Nodes	Gateway and IPC Nodes	Gateway and IPC Nodes
API Examples 1606	•Diagnostics •Event Detection	•Network attributes •Device attributes •Diagnostic data	•Packet routing to: •DBus •Bluetooth •IEEE 1394 •MOST •Ethernet	•User account management •Entity security •OEM bus access security •Internet access security •Application verification •Privacy	•Network alarms •SNMP services •IPC node access control	•Discovery •Initialization •Configuration

FIGURE 16

00h00T" 8090896D

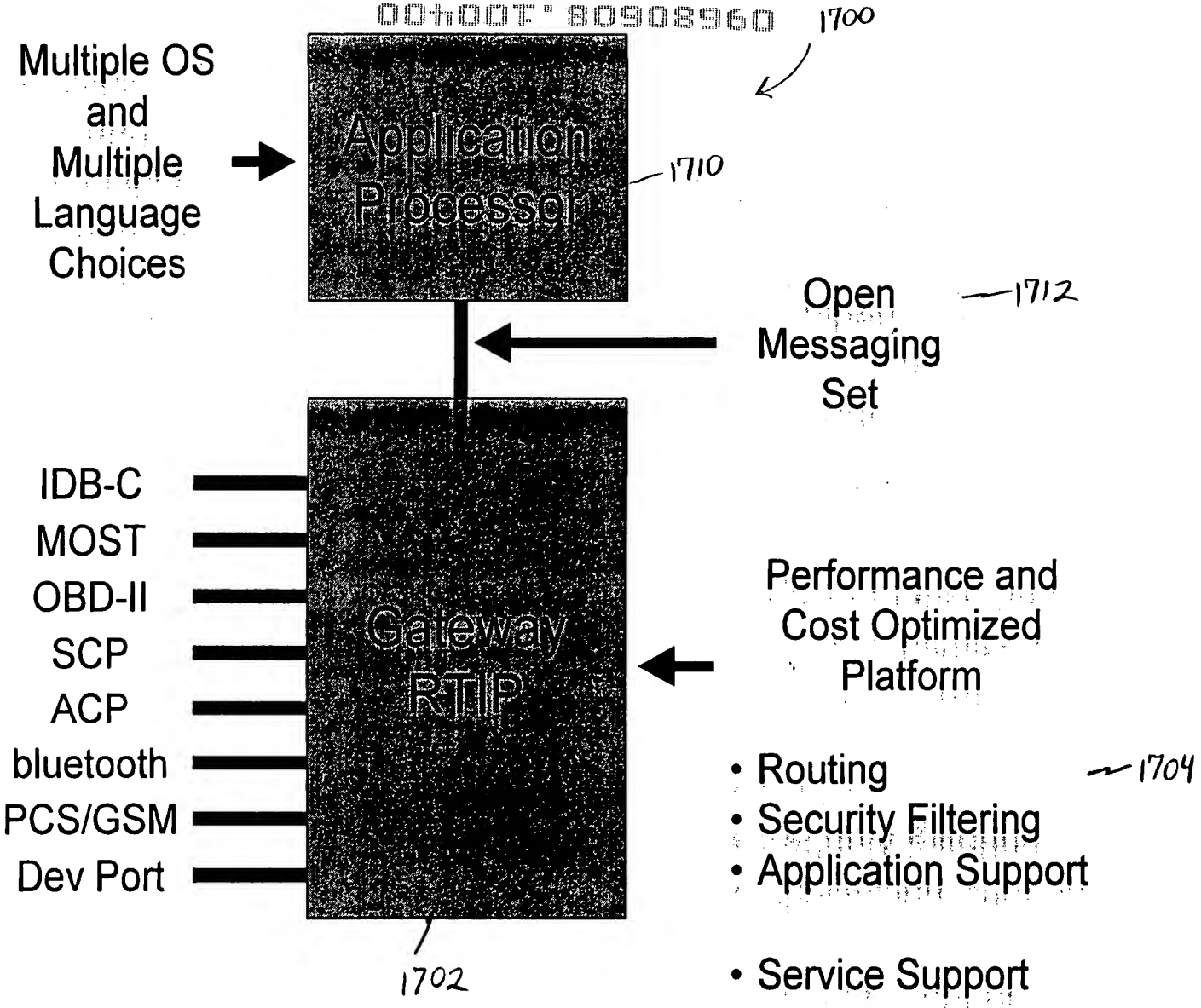


FIGURE 17

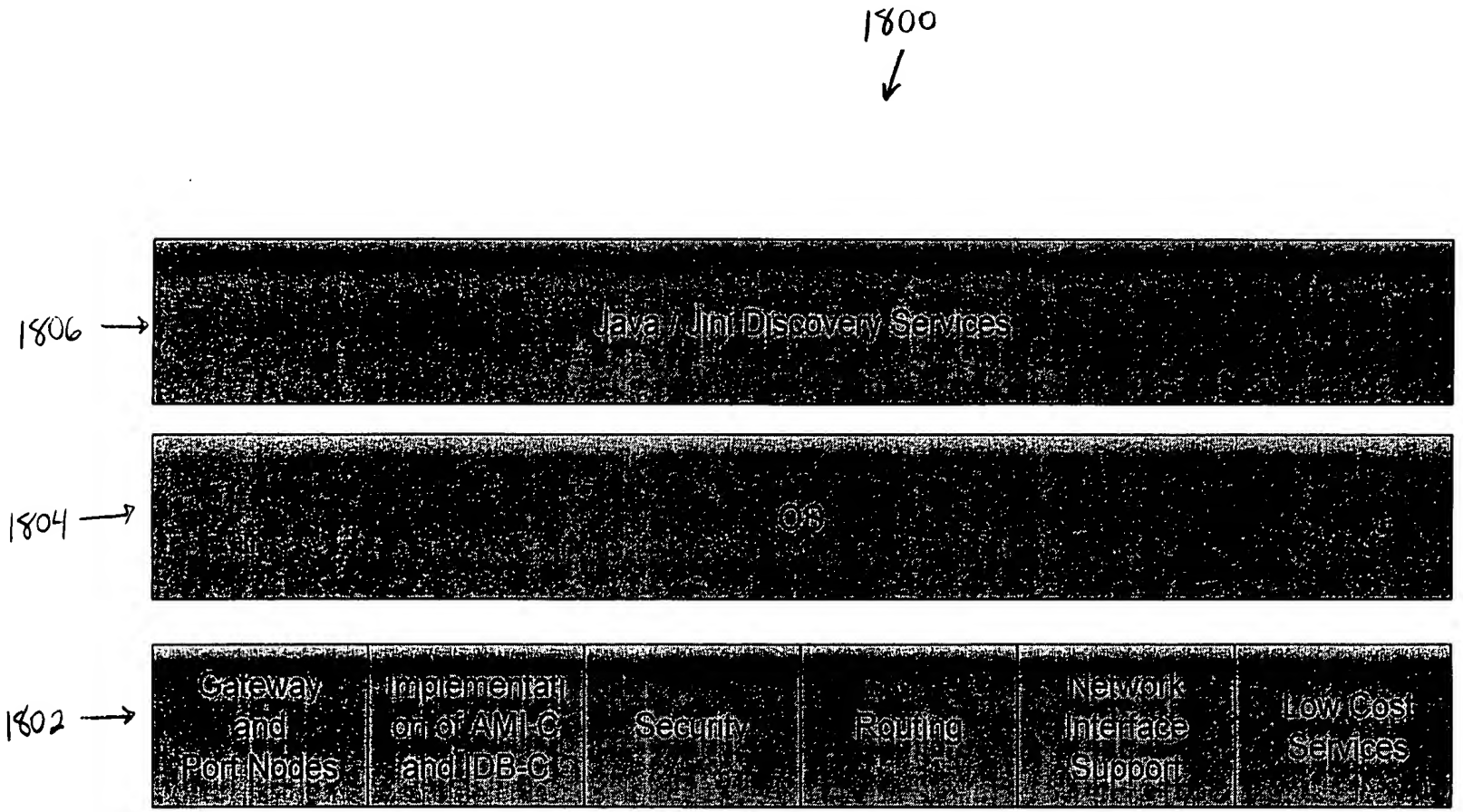

1800
1806
Java / Jini Discovery Services
1804
OS
1802
Gateway and Port Nodes
Implementation of AMI-C and IDB-C
Security
Routing
Network Interface Support
Low Cost Services

FIGURE 18

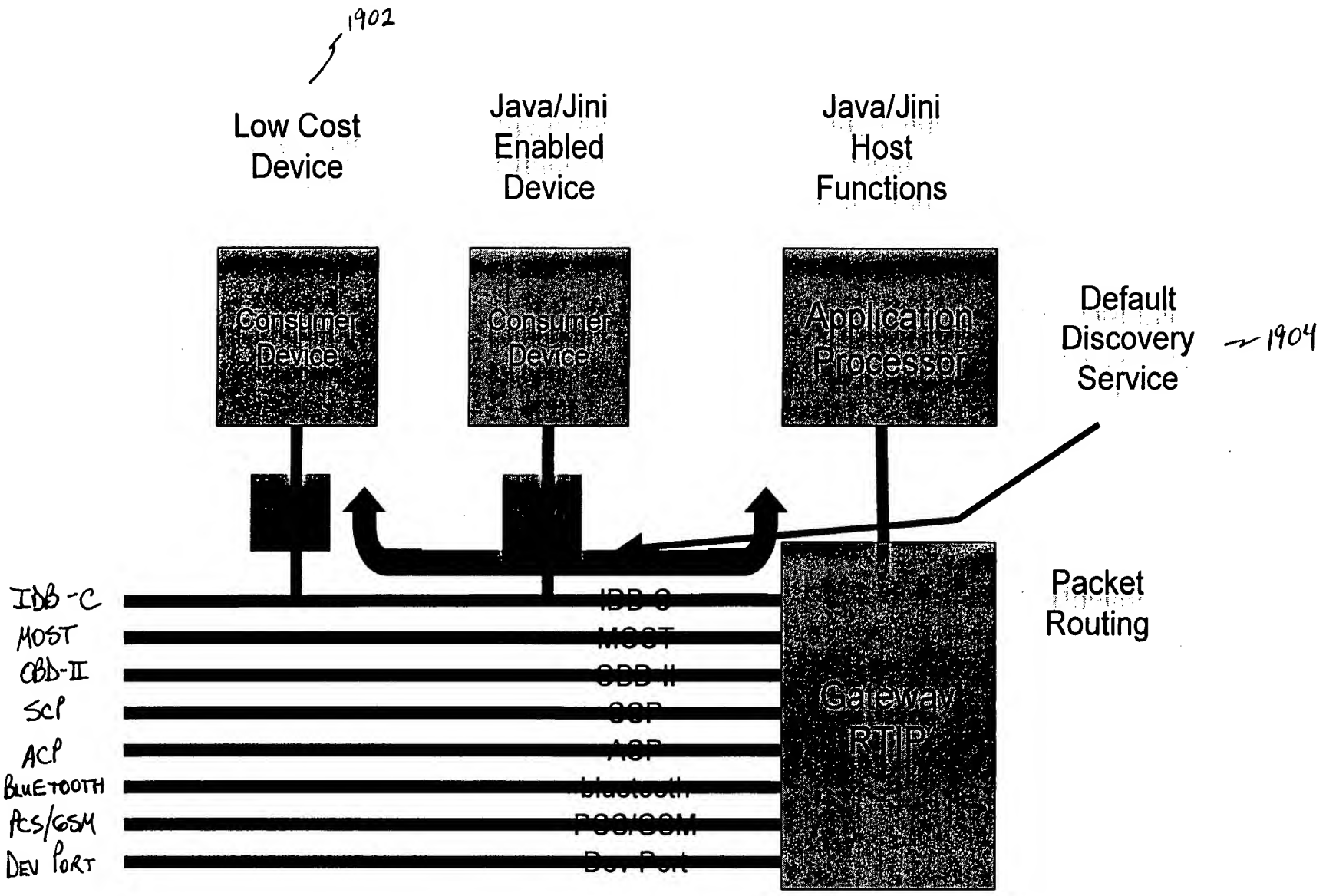

1902
Low Cost Device
Java/Jini Enabled Device
Java/Jini Host Functions
Consumer Device
Consumer Device
Application Processor
Default Discovery Service
1904
Packet Routing
Gateway RTIP
IDB-C
MOST
OBD-II
SCP
ACP
BLUETOOTH
PCS/GSM
DEV PORT

Figure 19

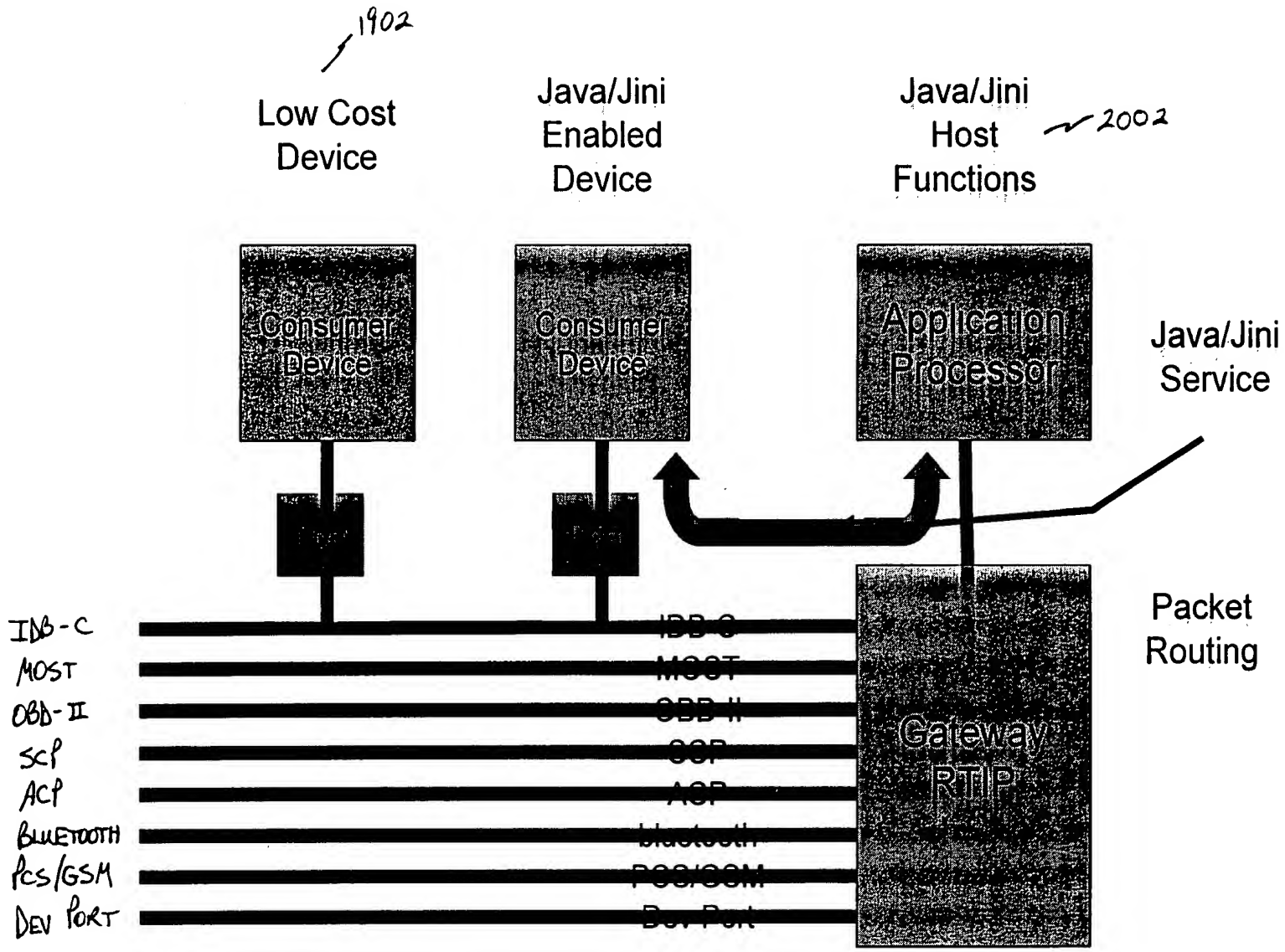

1902
Low Cost Device
Java/Jini Enabled Device
Java/Jini Host Functions
2002
Consumer Device
Consumer Device
Application Processor
Java/Jini Service
Packet Routing
Gateway RTIP
IDB-C
MOST
OBD-II
SCP
ACP
BLUETOOTH
PCS/GSM
DEV PORT

Figure 20

00h00T" 80908960

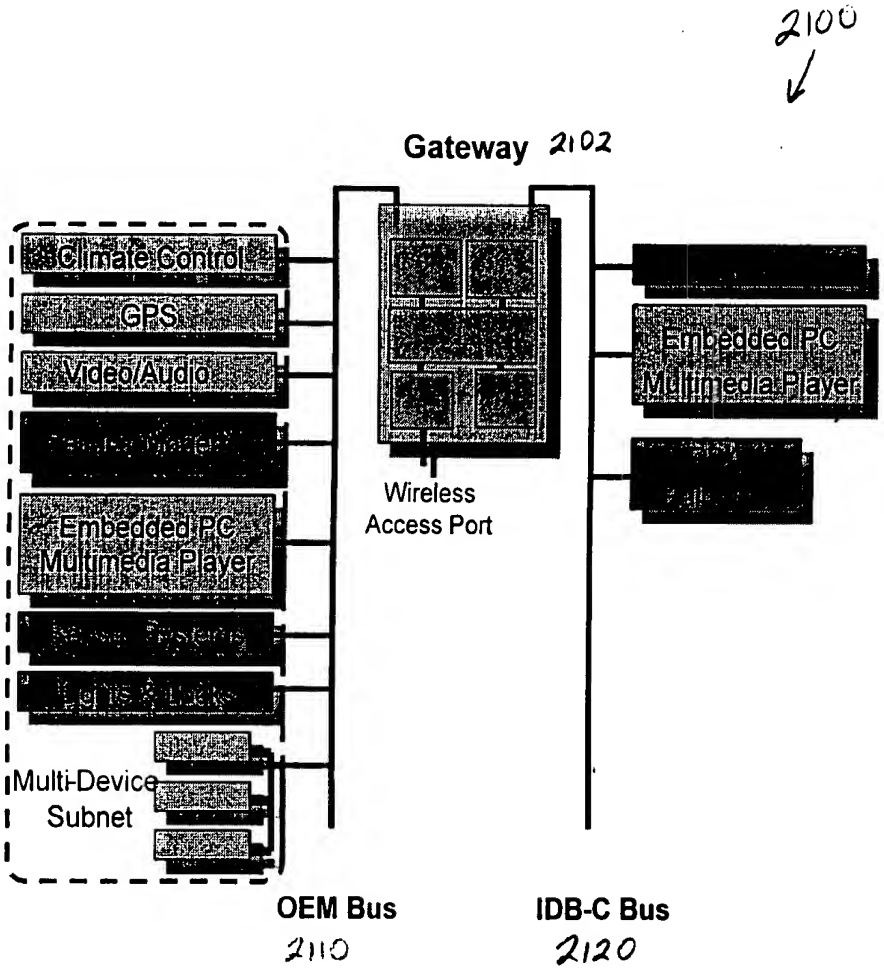


Figure 21

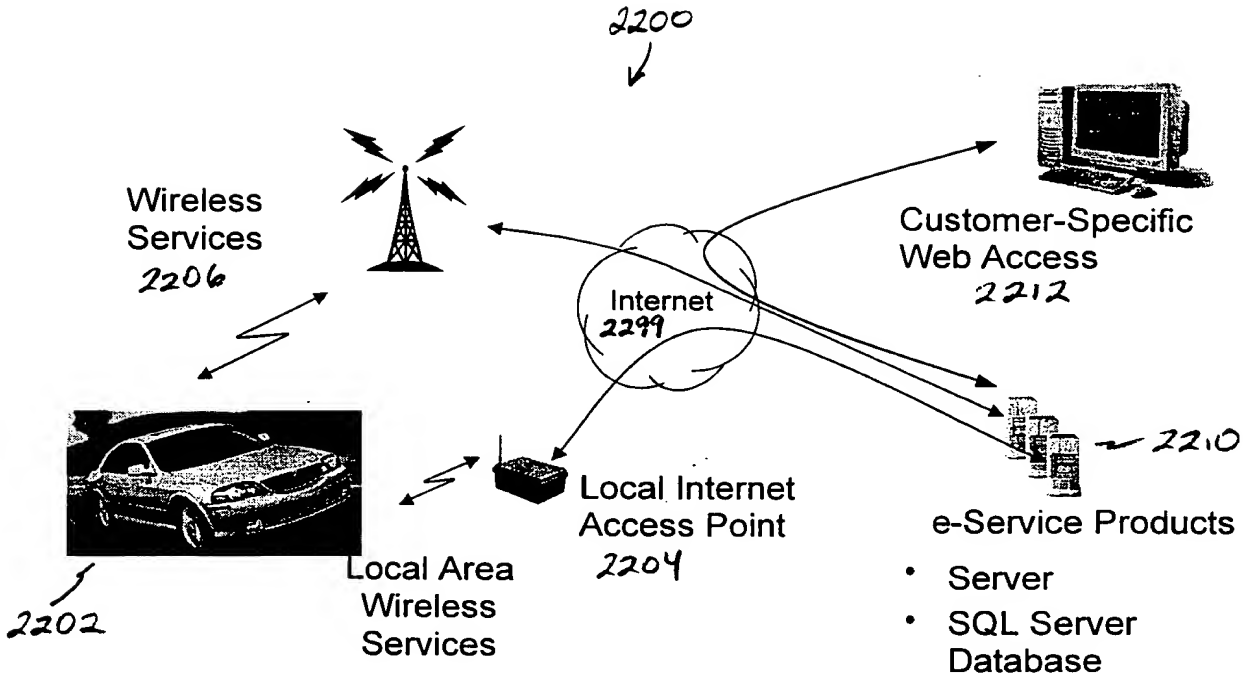

2200
Wireless
Services
2206
Internet
2299
Customer-Specific
Web Access
2212
2210
Local Internet
Access Point
2204
e-Service Products
• Server
• SQL Server
Database
2202
Local Area
Wireless
Services

FIGURE 22

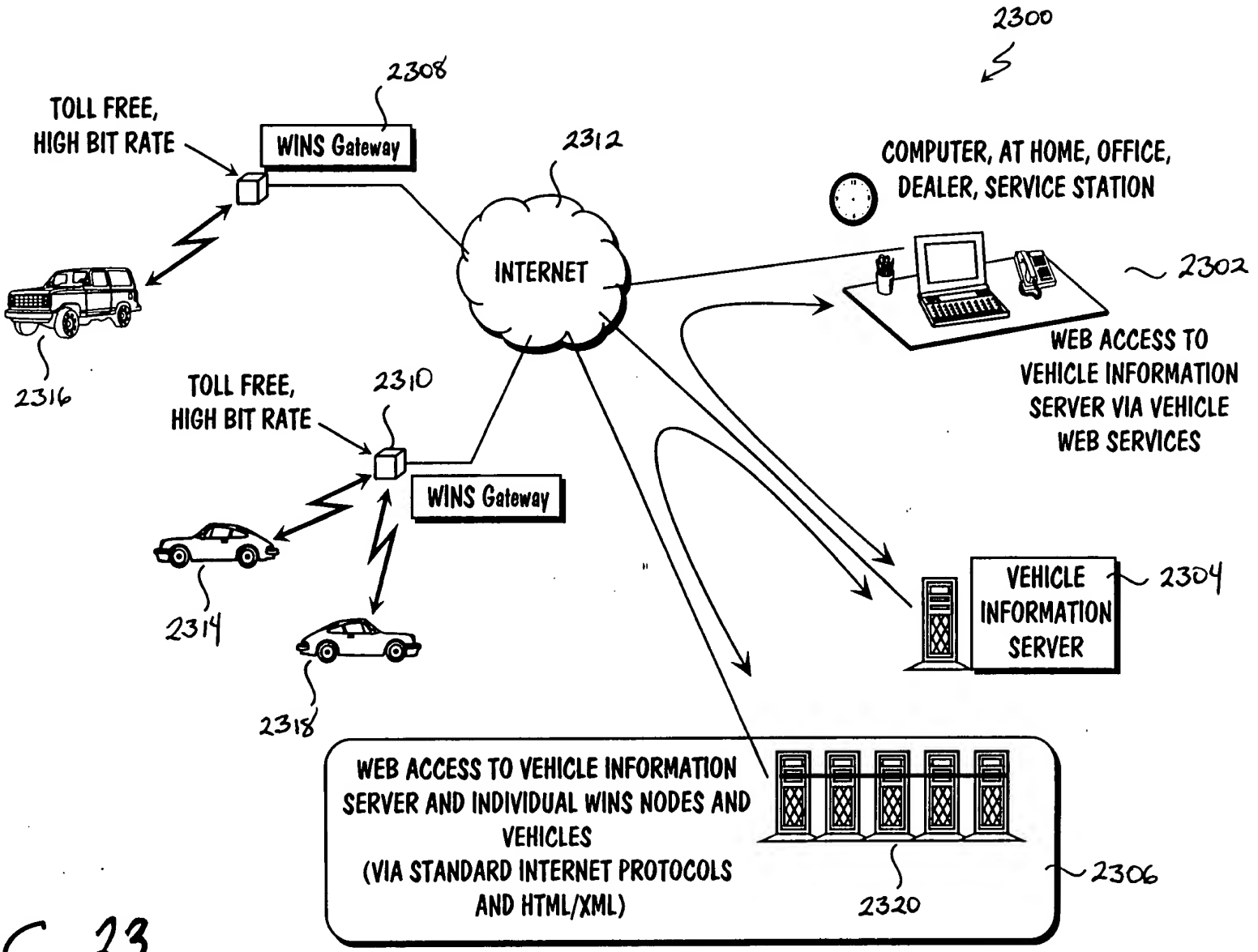

2300
2308
TOLL FREE,
HIGH BIT RATE
WINS Gateway
2312
INTERNET
COMPUTER, AT HOME, OFFICE,
DEALER, SERVICE STATION
2302
WEB ACCESS TO
VEHICLE INFORMATION
SERVER VIA VEHICLE
WEB SERVICES
2316
TOLL FREE,
HIGH BIT RATE
2310
WINS Gateway
2314
2318
VEHICLE
INFORMATION
SERVER
2304
WEB ACCESS TO VEHICLE INFORMATION
SERVER AND INDIVIDUAL WINS NODES AND
VEHICLES
(VIA STANDARD INTERNET PROTOCOLS
AND HTML/XML)
2320
2306

FIG. 23